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Term: L2 and (priority with report$)

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Search History

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DB=USPT; PLUR=YES; OP=ADJ			
L10	L2 and (priority with report$)	8	L10
L9	L3 and (priority with report$)	0	L9
L8	L3 and (priority with report$).ab.	0	L8
L7	L6 and priority	3	L7
L6	L3 and (priority or bandwidth).ab.	3	L6
L5	L3 and (priority and bandwidth)	19	L5
L4	L3 and (priority and bandwidth).ab.	0	L4
L3	L1 and (network with status with (monitor$ or report$ or manag$)).ab.	85	L3
L2	L1 and (network with status with (monitor$ or report$ or manag$))	760	L2
L1	((709/$)!.CCLS.)	15791	L1

END OF SEARCH HISTORY

Search Results - Record(s) 1 through 8 of 8 returned.

☐ 1. Document ID: US 6377993 B1

L10: Entry 1 of 8 File: USPT Apr 23, 2002

DOCUMENT-IDENTIFIER: US 6377993 B1
TITLE: Integrated proxy interface for web based data management reports

Detailed Description Text (78):
Particularly, as illustrated in FIG. 9, the data model 459 is one component comprising the priced reporting data store. In the preferred embodiment, the data model of StarODS is a dimensional or "star schema" model, including a central fact table multiply joined to a number of attendant tables known as dimensions. The relationships between the fact table and the dimensional tables are either enforced through keys, which may be generated, or as lookup codes. As shown in FIG. 9, the central fact table 461, referred to herein as "Perspective Base," provides access to a collection of attributes or facts concerning a call. The dimensional tables include the following: an Access Termination table 462 comprising data indicating whether a call was charged to recipient (inbound) or originator (outbound); an Access Type table 464 comprising data indicating the type of access (for outbound calls) or egress (for inbound calls) characteristics of a call; a Billing Corp table 466 comprising data indicating the hierarchical status of a customer for the purposes of billing charges for products and features; a Toll Free Number table 468 comprising data indicating any dialed number in which the three digits following the country code (1 for USA) is currently either 800 or 888; a Product Type table 469 comprising data indicating the product for which services are bundled for the purpose of invoicing; a GMT table 471 comprising date and time data adjusted to the Greenwich Mean Time Zone; a LST table 473 comprising date and time data adjusted to the local MCI switch which permitted access to the MCI network; an Orig_Geo table 476 comprising data indicating the geographic characteristics of a call's origination; a Term_Geo table 477 comprising data indicating the geographic characteristics of a call's termination; a Report Geo table 478 comprising data indicating the geographic characteristics of a call's origination or termination; an Idacc table 479 comprising data indicating a customer's defined id and/or accounting code; a Data Stream table 481 comprising data relating to the line speed characteristics of a data (non-voice) call; a Pay Phone table 482 comprising data denoting calls originating from a payphone; a Usage table 483 comprising data indicating the geographic attributes of a call which affect Tariff rates; an EVS Product table 484 comprising data representing Enhanced Voice Services products; a Directory Assistance table 486 comprising data indicating those calls requesting Directory assistance; a Range table 487 comprising data indicating distance bands a call may fall into; an NCR table 488 indicating Network Call Redirect calls; a Cell Phone table 489 comprising cellular call characteristics data; a VOS table 491 indicating Voice Operator Services calls; a Conference Call table 492 having data pertaining to characteristics of conference calls; a Cross Corp table 493 comprising data indicating inbound cross corporate routing of calls; a Currency table 494 indicating unit of currency for call prices; a card table 496 comprising data for billing calls to a location that may not be the one which originated the call an NCT table 497 comprising data representing Network Call Transfers; an Amount Range table 498 indicating call usage ranges based upon amounts; and, a Duration Range table 499 indicating call usage durations based on amounts. This star schema model is optimized for decision support and the retrieval of large amounts of data. Appendix H provides the data attributes of each of these dimension tables. As known, in the dimensional model, the grain of data stored in the fact table determines what level

of data can be drilled down into. It should be understood that the grain of the data stored in the Perspective Base table is at the singular call level.

Detailed Description Text (87):
In the preferred embodiment, the DSS architecture is transparent to the Report Manager which publishes Talarian messages to which the DSS will subscribe. In addition to the tokenized character string request message which specifies report type, filters, and any customer request-specific information, RM server provides additional fields as part of the Talarian request message including: a Corp_ID, Priority, and RequestID. Corp_ID allows the DSS to route the request to the appropriate data store without having to invoke a parser. Data are partitioned on Corp_ID in the ODS database warehouse. Request_id is used to send back an ARDA failure message, in the event of an invalid message. The Priority field allows DSS to pickup the next high priority request from a queue of non-processed requests, without invoking the parser.

Detailed Description Text (89):
More particularly, in view of FIG. 11(b), ARD metadata request messages are received into the ODS system via arbitrator processes 360a,b which are responsible for routing the request message to the appropriate ODS database according to a Corp/ODS mapping table 365. Report Manager publishes a single message subject "Arbitrator" having the above-mentioned request, Corp_ID, and Priority field information. Report Manager uses a round robin message delivery mechanism complemented by Talarian's GMD to publish messages to the subject Arbitrator 360a,b. The arbitrator extracts the Corp_ID field from the message and maps the Corp_ID to corresponding ODS DataMart in the table 365 it maintains. The arbitrator then republishes the message with the ODS#. As shown in the FIG. 11(b), a second arbitrator process 360b is provided to assure fail-over capabilities.

Current US Original Classification (1):
709/227

Current US Cross Reference Classification (1):
709/223

☐ 2. Document ID: US 6279033 B1

L10: Entry 2 of 8 File: USPT Aug 21, 2001

DOCUMENT-IDENTIFIER: US 6279033 B1
TITLE: System and method for asynchronous control of report generation using a network interface

Brief Summary Text (29):
According to another embodiment of the present invention, the system maintains a list of each report submitted for processing and other information related to such report. The other information may include the identification of users that requested the report, the time the report was initially requested, the estimated amount of time remaining on the report request, and the completion time if the report has been completed. This enables several advantageous functions to be performed by the system. The list may be maintained in a cache. When the cache fills up, reports may be cleaned from the list based on, for example, the age of the report, the priority of the report, the requester of the report, a predetermined schedule, or other techniques for reducing the number of entries in a cache. For example, a cache may be used and may be cleaned each time a report is requested, the system first compares the report requested with reports already pending or completed reports maintained in the cache. If the report is the same (or in some cases sufficiently

similar), the system does not submit the duplicate report to be processed, but rather adds the request by that user to the report entry in the status list for that report. When the report completes, then the report is sent to all users that requested the report, regardless of when they requested the report. If the report has already completed when the user request is received, the system immediately sends the results to the user rather than re-running the report.

Current US Original Classification (1):
709/217

Current US Cross Reference Classification (1):
709/219

CLAIMS:

10. The network-based system of claim 1 further comprising a status presentation means for transmitting status information to the user over the network related to a request for a report that the user has submitted.

☐ 3. Document ID: US 6176883 B1

L10: Entry 3 of 8 File: USPT Jan 23, 2001

DOCUMENT-IDENTIFIER: US 6176883 B1
TITLE: System and method for generating unsupported network information indicators

Brief Summary Text (7):
Modern distributed data processing systems, also called networks, may consist of hundreds or thousands of computing devices of varies kinds, often manufactured by different vendors and interconnected by many types of transmission media, including telephone lines, satellites, digital microwave radio, optical fibers, or digital data lines. They may include local or wide area configurations. Administrators managing a network require an ability to determine the status of the various computing devices within the network in order to monitor and manage resources within the network. Currently, an administrator may view various components within the network in the form of nodes or icons displayed at the administrator's station. As the number of nodes (computers or other data processing systems) increase, the display becomes more cluttered and information is harder to discern.

Brief Summary Text (9):
That is, due to the inhomogeneity, received data typically requires additional manipulation, thereby making device management using such data computationally intensive. Furthermore, such inhomogeneity also tends to require that device management needs to be done at one or more centralized locations, by computational devices that "know the whole picture" or can aggregate such inhomogeneous data into a coherent whole. Also, one additional difficulty exists in that the reported status information cannot be aggregated in any way to reflect user priorities, in that the non-homogeneous devices' reporting capabilities are typically a pre-defined set, from one any particular user (network or device manager) must work.

Brief Summary Text (10):
In light of the foregoing, it is apparent that a need exists for a method and system which will facilitate network or device management and monitoring in a decentralized way that reduces computational and bandwidth inefficiencies and allows a user to define what status information will be kept and reported. /

Detailed Description Text (71):
One illustrative embodiment of the present invention creates and utilizes one or more "named" Object Generation Tables, which are utilized to define, create, and support MIBs and objects not normally supported by unmodified SNMP network managers and agents. Each Object Generation Table consists of rows, wherein each row is filled with the following information: an index (utilized in conjunction with the name of each Object Generation Table to identify individual row numbers); a first defined operand (utilized to designate certain information accessible (e.g., an existing object) by a modified SNMP agent); a second defined operand (utilized to designate certain information accessible (e.g., an existing object) by a modified SNMP agent); an operation to be performed upon first and second defined operands; a result type (the data type to be associated with the result of the defined operation performed upon the first and second defined operands); an (optional) result object name (utilized by a modified SNMP network manager and modified SNMP agent to manipulate and track the results of the defined operation performed upon the first and second defined operands such as an object contained in a "New MIB"); and a status designator (utilized by a modified SNMP network manager and modified SNMP agent to create and delete entries from an "Object Generation Table." An example of how one illustrative embodiment arranges the foregoing data is the following table (which, it is to be understood, is to have a defined "name," such as "genObjectStatus" by which rows and columns of the table can be addressed via use of ASN.1; for example genObjectStatus1.2 would refer to the last object in the second row of "Object Generation Table" named "genObjectStatus"):

Detailed Description Text (92):
In response to notification that the requested "Generated Object Table" row has been created by modified SNMP agent 802, message 808 illustrates that modified SNMP network manager 800 defines that the first created row will consist of two "group member" operands equated with objects currently extant at the device and accessible by modified SNMP agent 802 (genGroupMemberObject 1.1 (which means the first member of row 1 of the group table)=curObject1.0 and genGroupMemberOjbect1.2 (which means the second member of row 1 of the group table)=curObject2.0, in FIG. 8), with the operations to be performed on the operands to be the operation of according the objects, represented by the two operands, group member status (genGroupMemberStatus.1.1=CREATE and genGroupMemberStatus.1.2=CREATE). Message 809 illustrates that once the foregoing noted attributes of the row have been set, modified SNMP agent 802 informs modified SNMP network manager 800 of that fact.

Current US Original Classification (1):
709/223

☐ 4. Document ID: US 6175866 B1

L10: Entry 4 of 8 File: USPT Jan 16, 2001

DOCUMENT-IDENTIFIER: US 6175866 B1
TITLE: Method and system for generating unsupported network monitoring objects

Brief Summary Text (7):
Modern distributed data processing systems, also called networks, may consist of hundreds or thousands of computing devices of varies kinds, often manufactured by different vendors and interconnected by many types of transmission media, including telephone lines, satellites, digital microwave radio, optical fibers, or digital data lines. They may include local or wide area configurations. Administrators managing a network require an ability to determine the status of the various computing devices within the network in order to monitor and manage resources within

the network. Currently, an administrator may view various components within the network in the form of nodes or icons displayed at the administrator's station. As the number of nodes (computers or other data processing systems) increase, the display becomes more cluttered and information is harder to discern.

Brief Summary Text (9):
That is, due to the inhomogeneity, received data typically requires additional manipulation, thereby making device management using such data computationally intensive. Furthermore, such inhomogeneity also tends to require that device management needs to be done at one or more centralized locations by computational devices that "know the whole picture" or can aggregate such inhomogeneous data into a coherent whole. Also, one additional difficulty exists in that the reported status information cannot be aggregated in any way to reflect user priorities, in that the non-homogeneous devices' reporting capabilities are typically a pre-defined set, from one any particular user (network or device manager) must work.

Brief Summary Text (10):
In light of the foregoing, it is apparent that a need exists for a method and system which will facilitate network or device management and monitoring in a decentralized way that reduces computational and bandwidth inefficiencies and allows a user to define what status information will be kept and reported.

Detailed Description Text (71):
One illustrative embodiment of the present invention creates and utilizes one or more "named" Object Generation Tables, which are utilized to define, create, and support MlBs and objects not normally supported by unmodified SNMP network managers and agents. Each Object Generation Table consists of rows, wherein each row is filled with the following information: an index (utilized in conjunction with the name of each Object Generation Table to identify individual row numbers); a first defined operand (utilized to designate certain information accessible (e.g., an existing object) by a modified SNMP agent); a second defined operand (utilized to designate certain information accessible (e.g., an existing object) by a modified SNMP agent); an operation to be performed upon first and second defined operands; a result type (the data type to be associated with the result of the defined operation performed upon the first and second defined operands); an (optional) result object name (utilized by a modified SNMP network manager and modified SNMP agent to manipulate and track the results of the defined operation performed upon the first and second defined operands such as an object contained in a "New MIB"); and a status designator (utilized by a modified SNMP network manager and modified SNMP agent to create and delete entries from an "Object Generation Table." An example of how one illustrative embodiment arranges the foregoing data is the following table (which, it is to be understood, is to have a defined "name," such as "genObjectStatus" by which rows and columns of the table can be addressed via use of ASN.1; for example genObjectStatus1.2 would refer to the last object in the second row of "Object Generation Table"named "genObjectStatus"):

Detailed Description Text (88):
In response to notification that the requested "Generated Object Table" row has been created by modified SNMP agent 802, message 808 illustrates that modified SNMP network manager 800 defines that the first created row will consist of two "group member" operands equated with objects currently extant at the device and accessible by modified SNMP agent 802 (genGroupMemberObject 1.1 (which means the first member of row 1 of the group table)=curObject1.0 and genGroupMemberOjbect1.2 (which means the second member of row 1 of the group table)=curObject2.0, in FIG. 8), with the operations to be performed on the operands to be the operation of according the objects, represented by the two operands, group member status (genGroupMemberStatus.1.1=CREATE and genGroupMemberStatus.1.2=CREATE). Message 809 illustrates that once the foregoing noted attributes of the row have been set, modified SNMP agent 802 informs modified SNMP network manager 800 of that fact.

Current US Original Classification (1):
709/223

CLAIMS:

5. The method of claim 3, wherein the step of monitoring further comprises the steps of:

querying the network agent as to the status of the built monitoring object;

in response to the query, examining the constructed string contained within the built monitoring object for an indication that one or more corresponding network parameters of interest of the device have changed; and

in response to an indication that one or more network parameters have changed, examining the changed network parameters such that network parameters of interest need only be examined when the parameters change.

10. The system of claim 8, wherein said means for monitoring further comprises:

means for querying said network agent as to the status of said built monitoring object;

means, responsive to said query, for examining said constructed strings contained within said built monitoring object for an indication that one or more corresponding network parameters of interest of the device have changed; and

means, responsive to an indication that one or more network parameters have changed, for examining said changed network parameters such that network parameters of interest need only be examined when said parameters change.

17. The program product of claim 15, wherein said program code for monitoring further comprises:

program code for querying said network agent as to the status of said built monitoring object;

program code responsive to said query, for examining said constructed string contained within said built monitoring object for an indication that one or more corresponding network parameters of interest of the device have changed; and

program code, responsive to an indication that one or more network parameters have changed, for examining said changed network parameters such that network parameters of interest need only be examined when said parameters change.

☐ 5. Document ID: US 6061724 A

L10: Entry 5 of 8 File: USPT May 9, 2000

DOCUMENT-IDENTIFIER: US 6061724 A
TITLE: Modelling process for an information system, in particular with a view to measuring performance and monitoring the quality of service, and a measurement and monitoring system implementing this process

Brief Summary Text (8):
Another product is "Perfagent" from the company ACANTHE SOFTWARE. This product is a multi-platform operations management report generator for an SNMP environment. It provides real-time monitoring, Indicator archiving in relational databases and offline analysis of the status of the components of a network or an information system.

Brief Summary Text (33):

In a preferred form of implementation of the process according to the invention, an Indicator contains a plurality of Formulas each combining a set of Variables, and the processing process comprises, for each Indicator requested in a report, a dynamic choice of a Formula from the plurality of Formulas associated with this Indicator, this choice being in particular determined according to the respective availability of the variables required by each of the said Formulas in the data source used and as a function of the priorities assigned to each of the Formulas.

Current US Original Classification (1):
709/224

Current US Cross Reference Classification (1):
709/223

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 6. Document ID: US 6055493 A

L10: Entry 6 of 8 File: USPT Apr 25, 2000

DOCUMENT-IDENTIFIER: US 6055493 A
TITLE: Performance measurement and service quality monitoring system and process for an information system

Brief Summary Text (7):
Another product is "Perfagent" from the company ACANTHE SOFTWARE. This product is a multi-platform operations management report generator for an SNMP environment. It provides real time monitoring, Indicator archiving in relational databases and deferred time analysis of the status of the components of a network or an information system.

Brief Summary Text (30):
In a preferred form of implementation of the process according to the invention, an Indicator contains a plurality of Formulas each combining a set of Variables, and the processing process includes, for each Indicator requested in a report, a dynamic choice of a Formula from the plurality of Formulas associated with this Indicator, this choice being in particular determined according to the respective availability of the variables required by each of the said Formulas in the data source used and as a function of the priorities assigned to each of the Formulas.

Current US Cross Reference Classification (1):
709/224

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments KWIC | Draw Desc | Image

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☐ 7. Document ID: US 5548506 A

L10: Entry 7 of 8 File: USPT Aug 20, 1996

DOCUMENT-IDENTIFIER: US 5548506 A
TITLE: Automated, electronic network based, project management server system, for managing multiple work-groups

Abstract Text (1):

Design and implementation of an `Auto Multi-Project Server System`, which automates the tasks of Project Management Coordination, for organizational work-group team members. The `Auto Multi-Project Server`, referred to as AMPS, consists of a core piece of software running on a host server computer system and interacting with a messaging system such as electronic mail, fax etc. Once the AMPS system is configured for the work environment, all interactions with it by work-group team members is via messages. First the AMPS system compiles multi-project plans into a multi-project database, and tracks the ownership of projects, tasks and resources within the plans. Second the AMPS system performs automatic checking of resource requests, if resource availability limits are exceeded then resources are re-allocated to projects based on priorities, and project plans are accordingly changed Third the database is processed periodically to send out reminder follow-ups and project status reports. Fourth the databases are continuously updated based on status changes reported by work-group members. These four steps are continuously repeated enabling an automated method of multi-project management for organizational work-group team members.

Brief Summary Text (9):
The goal of the `Auto Multi-Project Server` is to act as an automated computer based project coordinator to manage the goals of multiple organizational work-teams. Activities of the automated computer based server comprise of collating/compiling project data, flagging inconsistencies, follow-up with work-team members, obtain updated project tracking data, communicate project progress to work-team, resolve inter-project conflicts by re-allocation of critical resources based on project priorities and generate management reports for flagging time and cost overruns and critical path information.

Current US Cross Reference Classification (3):
709/206

CLAIMS:

1. A method executed by a computer system as part of a computer program, said system for coordinating the management of a project, said computer system to comprise of a central database server connected to a electronic network, said method using a two way electronic messaging system that allows different types of organizational work-group team members to send messages to the computer program and receive messages from the computer program via the said electronic network, said method storing and accessing data from a multi-project database, said method to be automatic in nature and with built in triggers which are based on the nature and status of said data without need for manual project management coordination, said project management coordination to involve all the steps of the project management cycle including planning, resource leveling, status reporting and reminding, tracking and updating plans, said method to be configurable for the said organizational work-group environment, said method comprising the steps of:

(a) identifying the owner of received message;

(b) identifying the nature of said received message;

(c) setting up said multi-project database and saving said received messages to said database according to the nature of said received message;

(d) receiving project plans and compiling project plans and saving project plans into said multi-project database;

(e) checking said project plans for resource requests against resource availability and reallocating resources if necessary based on inter-project priorities;

(f) recalculating and sending back said project plans based on resource reallocation;

(g) sending project status reports and reminders to organizational work-group team members based on the status of said triggers;

(h) receiving project updates and status changes and updating said project database;

(i) repeating steps (a) through (h) on a periodic basis, as desired by said organizational work-group team members.

☐ 8. Document ID: US 5193189 A

L10: Entry 8 of 8 File: USPT Mar 9, 1993

DOCUMENT-IDENTIFIER: US 5193189 A
TITLE: Programmable controller with multiple priority level task processing

Detailed Description Text (4):
The system controller 16 is connected through cable 25 to a programming terminal 24, which is used to load the user programs into the programmable controller and configure its operation, as well as monitor its performance. The terminal 24 is a personal computer programmed to enable the user to develop the control programs on the terminal, which programs are then downloaded into the programmable controller. Once the programs have been loaded into the programmable controller 10 and its operation debugged, the terminal 24 may be disconnected from the system controller 16 if further monitoring is not required. The system controller 16 may be also connected via a cable 26 to a local area network 28 over which it may receive data and programming instructions, as well as issue status information and report data to a host computer. This enables a central host computer or central terminal to program and control the operation of a plurality of programmable controllers on a factory floor.

Detailed Description Text (98):
The independent background tasks are user programs that generally are subordinate in execution priority to control programs and may be used for lengthy non-time critical operations such as data acquisition from other computers and productivity report generation. The background tasks, which are also compiled versions of programs written in a high level language by the user, may be invoked from a user control program, an interrupt routine, or from another background program. As will be described, the user control program is periodically interrupted by a real time clock, thereby permitting the background task to run for an interval of time. When a user control program is not being executed by a given processor module 18, any background tasks can run almost continuously, being interrupted only to perform "housekeeping tasks" as will be described. However, the background task usually will run intermittently to completion, unless intentionally aborted.

Current US Original Classification (1):
709/103

Current US Cross Reference Classification (2):
709/107

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PRIORITYS	0
BANDWIDTH.USPT.	88355
BANDWIDTHS.USPT.	12527
(3 AND BANDWIDTH AND PRIORITY).USPT.	19
(L3 AND (PRIORITY AND BANDWIDTH)).USPT.	19

Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

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WBN

Search: L5

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Search History

DATE: Sunday, May 11, 2003 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
	DB=USPT; PLUR=YES; OP=ADJ		
L5	L3 and (priority and bandwidth)	19	L5
L4	L3 and (priority and bandwidth).ab.	0	L4
L3	L1 and (network with status with (monitor$ or report$ or manag$)).ab.	85	L3
L2	L1 and (network with status with (monitor$ or report$ or manag$))	760	L2
L1	((709/$)!.CCLS.)	15791	L1

L5: Entry 1 of 19 File: USPT Mar 4, 2003

DOCUMENT-IDENTIFIER: US 6529475 B1
TITLE: Monitor for the control of multimedia services in networks

Abstract Text (1):
A method and system for reducing congestion of real time data traffic on a multimedia communications network having a traffic control mechanism. The method comprises of first extracting from data traffic in the multimedia communications network information regarding congestion of the multimedia communications network. This extraction is performed by a network of monitors. Secondly, congestion is regulated by a central server which receives network information from the monitors and utilizes the network information to analyze congestion status and communicate instructions to the multimedia communications network to reduce congestion.

Brief Summary Text (9):
The H.323 standard addresses call control, multimedia management, and bandwidth management for point-to-point and multipoint conferences. It is designed to run on common network architectures. As network technology evolves, and as bandwidth management techniques improve, H.323-based solutions will be able to take advantage of the enhanced capabilities. The H.323 standard is not tied to any hardware or operating system and H.323-compliant platforms will be available in all sizes and shapes, including video-enabled personal computers, dedicated platforms, and turnkey boxes.

Brief Summary Text (12):
Because the H.323 standard is Real-Time Transport Protocol (RTP) based, it can operate on the Internet's Multicast Backbone (Mbone), a virtual network on top of the Internet that provides a multicast facility, and supports video, voice and data conferencing. The H.323 [H.323v2] standard has been proposed to perform call control (i.e. make connections) of real-time service on IP networks. The H.323 standard allows end-points or terminals wanting to make connections to negotiate bandwidth and coding requirements before the connection is established. In this standard there are three key players: End-point: These are terminals which need to make connections. They request the connection through a gatekeeper (if one is on the network) and they also negotiate the connection parameters. Gatekeeper: These entities perform bandwidth control (on LANs) and routing of connection packets towards the destination terminal. Gateway: This entity can be thought of as a collection of end-points, but these entities also translate from other bearer protocols (such as time-division multiplexing (TDM)) to the IP protocol.

Brief Summary Text (14):
The Gatekeeper is a H.323 entity that provides address translation, control access, and sometimes bandwidth management to the LAN for H.323 terminals, Gateways, and Multipoint Control Units (MCUs). Gatekeepers perform two important call control functions which help preserve the integrity of the corporate data network. The first is address translation from LAN aliases for terminals and gateways to IPX addresses, as defined in the Registration/Admission/Status (RAS) specification. The second function is bandwidth management, which is also designated within RAS. For instance, if a network manager has specified a threshold for the number of simultaneous conferences on the LAN, the Gatekeeper can refuse to make any more connections once threshold is reached. The effect is to limit the total conferencing bandwidth to some fraction of the total available, the remaining capacity is left for email, file transfers, and other LAN protocols. The collection of all Terminals, Gateways and Multipoint Control Units managed by a single gatekeeper is known as a H.323 Zone.

Brief Summary Text (22):

Running real-time traffic over IP network has other significant problems also. Currently, there is no way of reserving bandwidth end-to-end in an IP network. Each IP packet takes its own route through the network. Therefore, each packet gets to its destination (in theory) through a different route and can have a different delay in getting to its destination. This causes delay variance or jitter at the destination where the packets have to be "played" for the destination user.

Brief Summary Text (23):
There have been some concerns in voice-over-IP (VoIP) industry that the introduction of large volume voice traffic into an IP network will unfairly compete for network bandwidth with existing TCP traffic. TCP has congestion control mechanisms built in. Once TCP senses network congestion by its detection of lost packets, it will reduce its packet transmission rate. Therefore, in case of network congestion, all TCP connections will throttle back until the congestion is relieved. However, UDP does not have similar control mechanisms. For now, UDP traffic in IP networks has been minimal. Although only TCP traffic reacts to network congestion, it has not been a problem. It is expected that the introduction of VoIP services will bring in a large volume of UPD traffic. Voice UDP traffic is an ill-behaved source and can potentially lock out TCP traffic in case of congestion. Since other multi-media services, such as video conferencing, are also expected to use UDP as the transport layer protocol, this problem exits for all IP multi-media services. Data applications currently use and will continue to use reliable transmission protocols (i.e. TCP) because data integrity is the top priority. The perceived UDP traffic increase will come from IP multimedia applications. Some congestion control mechanism is required to manage multi-media UDP traffic.

Detailed Description Text (3):
Video and audio traffic is bandwidth intensive and could clog the corporate network. The H.323 standard addresses this issue by providing bandwidth management. Network managers can limit the number of simultaneous H.323 connections within their network or limit the amount of bandwidth available to H.323 applications. These limits ensure that critical traffic will not be disrupted.

Detailed Description Text (7):
According to the H.323 standard, voice traffic (video traffic as well) is transmitted on top of RTP/RTCP. The real-time transport protocol (RTP) provides end-to-end delivery services for data with real-time characteristics, such as interactive audio and video. These services include payload type identification, sequence numbering, time stamping and delivery monitoring. The RTP control protocol (RTCP) is based on the periodic transmission of control packets to all participants in the session. It provides feedback on the quality of the data distribution, carries a persistent transport-level identifier for RTP sources, and controls the RTCP packet rate to scale up to a large number of participants. RTCP also dynamically keeps track of the number of participants in a session and guarantees the control traffic is limited to a small fraction of the session bandwidth (suggested at 5%).

Detailed Description Text (11):
The appropriate usage of congestion monitors can reduce the delay variance and packet drop rate of IP packets and, thus, improve Quality of Service (QoS) for multi-media IP services. There are two possible approaches to implement control over network congestion. These are call admission control and bandwidth reduction.

Detailed Description Text (12):
Call admission control is probably the more effective approach for voice over IP services. It is also very effective for other type of services. In the preferred embodiment, call admission control (i.e., rejecting new calls) is implemented at network call control centers, gatekeepers, to control network congestion. Whenever the centralized congestion server detects congestion in the network, it will inform the relevant gatekeepers in the network. If the congestion is global, all gatekeepers will be informed. If it is local to certain part of the network, only gatekeepers controlling that part of the network will be informed in the preferred embodiment. Upon such notification, gatekeepers will adjust its call admission policies according to certain predefined rules. Under these rules in the preferred embodiment, it is tougher for a new call to be admitted the more congested the

network is. Also, the rules provide fairness among users and enforce service priority if required. Since the central congestion server utilizes real time RTCP information generated by RTP connections, the scheme can provide responsive and timely control over voice multi-media UDP traffic in a IP network.

Detailed Description Text (13):
Bandwidth reduction is the second approach to controlling the network congestion. Unlike data applications, which are delay insensitive, multi-media applications require certain constrains on end-to-end data delivery. Therefore, the schemes utilized in TCP protocol may introduce unconstrained delay. Bandwidth reduction can not be achieved by increasing transmission time and, consequently, reducing the transmission rate. Instead the amount of data that needs transmission should be reduced for multi-media services in case of network congestion. For video, bandwidth reduction can be achieved by adjusting window size, frame rate, video quality, color coding schemes, etc. In voice-only connections, such bandwidth reduction options are limited. For example, the lowest coding rate for VoIP is 5.3 kbps which, including all the header overhead, has an effective rate of only 16 kbps. There are ways to reduce it further, such as silence compression and header compression.

Detailed Description Text (14):
Normally, applications can detect congestion by RTCP information they receive and are expected to take certain actions to reduce its data rate in case of congestion. However, it is possible that even though some connections do not see obvious congestion signals, the overall network is congested. In order to effectively control the congestion, the network may want to make these applications reduce their data rate as well. There are two possible ways of doing it. In the preferred embodiment, the gatekeepers inform these applications directly. The other embodiment allows the congestion monitors to alter the content of RTCP packets to "fool" the source applications into congestion detection and bandwidth reduction.

Detailed Description Text (15):
In the preferred embodiment, the balance between the TCP congestion control schemes and the proposed RTCP based control scheme is a critical issue. Fairness needs to be preserved between the two schemes according to service priority and bandwidth availability. Neither scheme takes away an unfair amount of bandwidth at the same priority level from the other when congestion happens. Since the TCP schemes are well standardized whereas RTCP does not specify how to act on the congestion, RTCP schemes are tuned to react in a manner comparable to TCP under congestion in the preferred embodiment.

Current US Cross Reference Classification (3):
709/223

CLAIMS:

18. The method of claim 3, wherein said controlling step includes: when a reduction in data rate is desired from a transmitting application, altering, via said plurality of monitors, a content of said RTCP packets to force congestion detection and subsequent bandwidth reduction for said transmitting application.

20. The system of claim 9, wherein said controlling means includes: when a reduction in data rate is desired from a transmitting application, means for altering, via said plurality of monitors, a content of said RTCP packets to force congestion detection and subsequent bandwidth reduction for said transmitting application.

WEST

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Term	Documents
PRIORITY.USPT.	114088
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Search: L7

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Search History

L7 #1 + #3

DATE: Sunday, May 11, 2003 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
	DB=USPT; PLUR=YES; OP=ADJ		
L7	L6 and priority	3	L7
L6	L3 and (priority or bandwidth).ab.	3	L6
L5	L3 and (priority and bandwidth)	19	L5
L4	L3 and (priority and bandwidth).ab.	0	L4
L3	L1 and (network with status with (monitor$ or report$ or manag$)).ab.	85	L3
L2	L1 and (network with status with (monitor$ or report$ or manag$))	760	L2
L1	((709/$)!.CCLS.)	15791	L1

L7: Entry 1 of 3 File: USPT Oct 15, 2002

DOCUMENT-IDENTIFIER: US 6466978 B1
TITLE: Multimedia file systems using file managers located on clients for managing network attached storage devices

Abstract Text (1):
A multi-media file system for conmmunicating information between a multi-media client and a network storage device over a network. The file system includes a cluster that comprises one cluster manager and at least one file manager with each network storage device. The cluster manager is located on a client, includes an admission controller for controlling the admission of a request from a client for a file operation upon a selected file. A network bandwidth request from the admission controller is responded to by a network status determiner included in the cluster manager. The network status determiner determines the available network bandwidth. Each file manager is located on one of the clients. The file managers manage file maintenance procedures of corresponding files located on the network storage device. Each file manager includes a disk status determiner for determining the available disk bandwidth. The disk status determiner responds to a request from the admission controller.

Detailed Description Text (24):
Referring to FIG. 4, the split and share technique is illustrated. The split and share technique is used to initially split and distribute the available bandwidth amongst the managers and then to provide a process for the dynamic reallocation of bandwidth during steady-state operation. At step 90 an initial quantity of bandwidth is allocated to each manager. The initial bandwidth allocations are based on criteria such as prior experience, the expected workload, and the type of data the manager controls. The bandwidth allocations are then dynamically adjusted during the operational period, as managers that require additional bandwidth, poll the other managers for excess bandwidth. This is illustrated in the following steps. At step 92 a request for the usage of bandwidth is received by the manager. The manager evaluates the request, step 94, and grants the requested bandwidth if it meets a predetermined request benchmark, such as being less than the bandwidth allocated to the manager, step 96. The manager then completes its admission control. At step 98, the manager determines whether all of the other managers have been queried for excess bandwidth. The request is denied if all of the other managers have been queried, step 100. Otherwise, the manager continues to poll the other managers for excess bandwidth, step 102. Although in the preferred embodiment of the invention the other managers are polled in a predetermined order, such as location on the network and previous bandwidth utilization, it is within the scope of the invention to poll the other managers randomly. The other manager allocates the requested bandwidth if that manager is not also requesting excess bandwidth, steps 104 and 106. When more than one manager is requesting bandwidth a priority is assigned to the managers based on a predetermined manager bandwidth priority, such as the quantity of bandwidth that the managers are each requesting and the importance of the requesting managers, step 103. In the preferred embodiment of the invention, the bandwidth priority is determined based on the quantity of bandwidth that each manager is requesting. If the manager is requesting less bandwidth than the other manager is requesting, then the other manager allocates the requested bandwidth to the manager, steps 108 and 106. If the manager is requesting more bandwidth that the other manager is requesting, then the manager allocates the requested bandwidth to the other manager, steps 108 and 110. Once the manager has queried each of the other managers it conducts its admission control based upon the amount of bandwidth it was able to acquire.

Current US Original Classification (1):

709/225

Current US Cross Reference Classification (1):
709/224

L7: Entry 3 of 3 File: USPT Mar 11, 1997

DOCUMENT-IDENTIFIER: US 5611038 A
**** See image for Certificate of Correction ****
TITLE: Audio/video transceiver provided with a device for reconfiguration of incompatibly received or transmitted video and audio information

Abstract Text (1):
A general purpose architecture and process for multimedia communications in which a number of video and audio information production devices are connected to a telecommunications network. Each of these video and audio information production devices is provided with an input/output device for receiving and transmitting information from the telecommunications network on a real time basis. The input/output device continuously monitors the run-time status and condition changes of the telecommunications network and would dynamically control and adjust, on a real time basis, the corresponding network bandwidth prior to immediately transmitting all of the video and audio information to the telecommunications network.

Detailed Description Text (6):
As shown in FIG. 3, we illustrate a product version of our invention 112 specifically designed for the consumer market. The product is a sleek black box 111 with approximately the size and dimension of a VCR. The back of the device has various connectors to interconnect 114, 116 computer 106, television 104, telephone 102, and fax machine 108. For convenience. The front panel of the device 111 will provide a small black and white display for preview purpose. Otherwise, it will be similar to a VCR 100 panel, and yet the control knobs for the volume control, video quality level, communication speed, media priority, program selection, mode indicator will be provided. The remote control device 110 is accompanied to provide the screen programming capabilities which would allow user to select and program the computer 106 through point and select toward the TV 104 screen.

Current US Cross Reference Classification (3):
709/221

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Term: L3 and (priority and bandwidth)

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L6	L3 and (priority or bandwidth).ab.	3	L6
L5	L3 and (priority and bandwidth)	19	L5
L4	L3 and (priority and bandwidth).ab.	0	L4
L3	L1 and (network with status with (monitor$ or report$ or manag$)).ab.	85	L3
L2	L1 and (network with status with (monitor$ or report$ or manag$))	760	L2
L1	((709/$)!.CCLS.)	15791	L1

END OF SEARCH HISTORY

L5: Entry 2 of 19 File: USPT Nov 12, 2002

DOCUMENT-IDENTIFIER: US 6480748 B1
TITLE: Facility management platform for a hybrid coaxial/twisted pair local loop network service architecture

Abstract Text (1):
A facility management platform (FMP) monitors and views the status of a plurality of individually addressable downstream devices including, but not limited to, addressable terminals, IRG's, settops, cable modems, taps, nodes, and/or hubs at a network control center. The FMP may display problems at these downstream devices, for example, power loss, and/or may automatically notify the appropriate companies and/or personnel to correct the problem.

Brief Summary Text (4):
As deregulation of the telephone industry continues and as companies prepare to enter the local telephone access market, there is a need to offer new and innovative, high bandwidth services that distinguish common carriers from their competitors. This cannot be accomplished without introducing new local access network architectures that will be able to support these new and innovative services.

Brief Summary Text (11):
In order to provide an improved network, it is desirable for the interexchange companies to have access to at least one of the twisted-pair lines, coaxial cable, hybrid fiber facilities with either twisted pair or coaxial cable or alternate wireless facility connecting each of the individual users to the local cable television or toll telephone or hybrid network before the lines are routed through the conventional local telephone network equipment. It is preferable to have access to these lines prior to any modem or switching technology offered by the local telephone service providers. By having access to the twisted-pair wires or coaxial cable or hybrid facilities entering or leading to the customer's premises, interexchange companies can differentiate their services by providing higher bandwidth, improving the capabilities of the customer premises equipment, and lowering overall system costs to the customer by providing competitive service alternatives.

Detailed Description Text (9):
The ISD 22 or IRG 22-1 (FIG. 1A, 1E) may be interconnected to various devices such as a videophone 130, other digital phones 18, set-top devices (not shown), computers 14, and/or other devices 15, 16 comprising the customer premise equipment 10. Per FIG. 1E, the IRG 22-1 is shown coupled with a plurality of analog lines 15-1 to 15-4 to a business data services interface 17, for example, a set of V. 35 interfaces, for providing various digital bandwidth services such as an 56 Kbps service 17-1, 64 Kbps service 17-2, ISDN service 17-3 and T1 (1.544 Megabps service) 17-4. An Ethernet link serves an Ethernet telephone 18-1 and the user's personal computer local area network including PC 14-1 provided via telephone house wiring. The user's television 19-1 and other coaxial cable fed devices are connected to CATV and enhanced services via in-house coaxial cable.

Detailed Description Text (15):
Referring to FIG. 2, there is shown an integrated residence gateway 22 which is very similar to an intelligent service director 22 discussed in earlier U.S. application Ser. No. 09/001,424, filed Dec. 31, 1997. The IRG 22 may connect with a variety of devices including analog and digital voice telephones 15, 18; digital videophones 130, devices for monitoring home security, meter reading devices (not shown), utilities devices/energy management facilities (not shown), facsimile devices 16,

digital audio devices via audio interface 122, personal computers 14, cable television set top devices 131 and/or other digital or analog devices. Some or all of these devices may be connected with the IRG 22 via any suitable mechanism such as a single and/or multiple twisted-pair wires, in-premises coaxial cable and/or a wireless connection. For example, a number of digital devices may be multidropped on a single twisted-pair (to FMP) or coaxial cable (to C-FMP) connection. Similarly, analog phones and other analog devices may be multi-dropped using conventional techniques. Settop cable television terminals 131 or personal computers utilizing cable modem bandwidth Internet services are typically coupled to IRG 22 to coaxial cable lines run within the home. Alternatively, services are provided via an Ethernet interface 119 or other high bandwidth interface.

Detailed Description Text (19):
A fundamental difference between an ISD and the integrated residence gateway of the present invention is the IRG's ability to receive or transmit signals over a coaxial drop or a twisted pair drop or both. A TVRC modem and a cable modem operate according to different protocols. Typically, the twisted pair facility is terminated by a TVRC modem which provides available bandwidth services over a dedicated twisted pair subscriber loop while the cable modem provides an upstream band of frequencies of approximately 540 Megahertz susceptible to noise ingress over the cable plant and as much as one gigahertz of bandwidth in the downstream direction. Both upstream and downstream bandwidth is shared with other upstream subscribers.

Detailed Description Text (20):
A typical cable modem, for example, one implementing a data over cable service interface specification (DOCSIS), comprises QPSK or 16-QAM modulation for upstream transmission and 64 or 256 point QAM for downstream transmission. Each 6 MHZ downstream or upstream channel can provide up to 38 Mbps data service in accordance with quality of service constraints since the bandwidth is shared with other downstream and upstream subscribers. Some studies suggest that up to 200 or more subscribers can share the bandwidth effectively. In the upstream direction due to various issues a 10 Mbps may be provided. In contrast to Ethernet's CSMA/CD protocol, the DOCSIS access scheme provides cable/telephone operators the opportunity to fill their pipelines at 75% or greater of their theoretical capacity. Data encryption, for example, DES-based encryption/decryption, provides privacy to users of the shared upstream and downstream bandwidth.

Detailed Description Text (34):
The ISD/IRG 22 performs intelligent multiplexing, dynamic bandwidth allocation, and routing of voice and data and may also include advance signal processing for enabling voice activated commands. It may be possible to give the video phone of FIG. 3A away for free so that all house-holds regardless of income level or desire to purchase a personal computer will have access to the vast information resources of the Internet, an interexchange carrier's such as AT&T's networks, and/or third party networks including those providing pay per view (PPV) movie content and broadcast networks. It is anticipated that the video phone concept together with the ISD/IRG, FMP/C-FMP, and NSP of the present invention will revolutionize the delivery of telephony services and provide a quantum leap in the paradigm of telecommunications, improving the quality of life of interexchange carrier customers while turning the copper loop or the coaxial cable drop into their homes into an increasing necessity for all users.

Detailed Description Text (35):
For high end residential consumers who want more convenience and simplicity in their daily lives and convenient access to more information devices coupled to the ISD/IRG provide, for example: easier delivery of a wider range of telephony services (e.g., customer care, marketing, operator services) with cost savings due to automation; new service opportunities such as interactive electronic catalog shopping from the home, and advertising; ability to offer ultra fast Internet access to every household, penetrating even those without a PC unlike traditional voice/touch tone telephony access; high fidelity voice and music; touch screen and/or voice activated customer interface; asymmetric high speed transport of data to the home with the asymmetric character of the link and apportionment of that bandwidth variable depending on the amount of traffic; new service opportunities such as 3rd party bill payment including paper-less bill payment, banking, obtaining smart card cash in an

ATM transactions, electronic shopping from the home, electronic coupons, advertising, electronic review and payment of bills, calling plans, class of services, as well as other services and plans; Interactive video teleconferencing; state-of-the-art networking for Work-at-Home; private line services; Call Connection including the self scheduling of conference calls without the need for an operator as well as initiation of interactive calls with white board augmentation using an appropriate applet downloaded from the NSP; class services invoked, for example, via icons and prompts in a natural manner without requiring memorization of numerical codes; navigation & access for voice, e-mail, and fax messages; obtain operator services without an operator, credit for wrong number, rate table, etc.; define profile for pointcast services; purchase products advertised on TV via synchronized ordering screen with television or PPV shows; Multimedia Enhanced Voice Calls, interactive voice & data response applications & info- on-demand; Support for work-at-home via virtual WAN; Screen pops for message/call alerting; graphical call management using touch and/or a mouse interface, including, for example call setup/bridging capabilities and point-and-click/tap-and-drag conferencing graphical use interfaces to initiate POTS calls, personal registry, mobility manager, call scheduling, call me back standard messages, personal assistant; Universal Multimedia Mailbox including a common interface for fax, voice, text, audio, and/or audio/visual images; 7 kHz high fidelity voice; asymmetric high speed transport with dynamic bandwidth allocation; residential LAN interface and associated local area network within the home; interactive video teleconferencing, display of web pages for customers placed on-hold, and other applications as discussed herein.

Detailed Description Text (38):
A basic Premises Distribution Network (PDN) 500 for one exemplary embodiment of a typical residential application of the ISD/IRG 22 is shown in FIG. 5. The premise distribution network 500 may include one or more Ethernet connections 500 for connecting a plurality of devices such as a number of personal computers 14A, 14B, a vision phone, cable set top terminal and/or other devices. Further, the premise distribution network 500 may include any number of conventional analog lines 505 (e.g., Tip/Ring (T/R) phone lines), each having one or more associated analog phones (e.g., 15A-15n), and/or associated PCs with modem and/or phone cards. Further, the premises distribution network 500 may include any number of ISDN lines 506, each having any number of digital appliances such as ISDN compliant devices and/or video phones 130. The premises distribution network 500 may use existing twisted pair telephone line, a coaxial cable line and/or may utilize a special cable to facilitate CATV, Ethernet and/or other LAN connections. Where the video phone 130 may share the same LAN as a connected PC 14A, prioritization software in the LAN driver gives priority to video and/or audio transmissions to and from the video phone to reduce latency time and unpredictable delays. Alternatively, the video phone 130 may be coupled via a dedicated ISDN connection, a dedicated ethernet connection, and/or another dedicated connection or coaxial cable connection to the ISD/IRG 22. The video phone may have an integrated analog phone for life line support. Alternatively, one of the analog phones serves the function of providing lifeline support. Further, an Internet telephony phone (not shown) may provide lifeline service via a coaxial drop to the home. Where the video phone 130 includes lifeline support, it is preferred to transmit data to the phone in a band above 7 kHz using ADSL like modem technology.

Detailed Description Text (43):
The packet handling in the present system may be variously configured. For example, in the CPE-Network direction, the processor 102 may be configured to act as a packet handling subsystem to processes frames from the FMP and to generate DSL frames going to the FMP. The ISD/IRG and the FMP/C-FMP include DSL/cable modems (e.g., TVRC/DOCSIS standard cable) modems to terminate the link layers associated with the DSL or coaxial segment of the connection. In a similar manner as the FMP/C-FMP, the processor in the ISD/IRG may be configured to reconstruct the IPv6 packets from DSL frames and then separates IP packets containing voice from those containing data and from those containing signaling. In the ISD/IRG, speech packets from the Packet Handling subsystem may be delivered to the residential interface for output to one or more analog lines to create virtual phone lines using the upper bandwidth of the DSL modem (e.g., 40 Khz to 1 MHz) in a similar manner as the packet-to-circuit translation subsystem which may be utilized in the FMP/C-FMP. The processor 102 in the ISD/IRG 22 may also be configured to generate signaling packets which may be

forwarded to the FMP/C-FMP for later utilization in either an in-band or out-of-band routing subsystem such as a conventional subscriber signaling subsystem (e.g., TR 303). Similarly, the processor 102 in the ISD/IRG 22 may include a subscriber signaling subsystem as part of an external routing subsystem. In this manner, packets received from the FMP/C-FMP in the network-CPE direction (including voice, data, video, and control packets) may be demultiplexed, reformatted with an appropriate protocol, and output to an attached peripheral device connected to the premise distribution network 500.

Detailed Description Text (49):
The processor 102 in the ISD/IRG 22 may be configured to discriminate between the various forms of traffic and to route this traffic to an appropriate device. Where high priority voice and/or video is distributed across the interface, the ISD/IRG may include one or more priority queues disposed in the SRAM and/or DRAM 103, 104. There may be different priority queues for each connected device on the premise distribution network (including any attached device described with regard to FIG. 2 or discussed herein). Additionally, there may be different queues for each device in both the transmit and receive direction. Further, control and signaling information may be assigned various levels of priority. A similar queue structure may also be implemented in the FMP/C-FMP. In one exemplary embodiment, the queues give priority to signaling information, and voice information for the various attached telephones. If a queue is in danger of overflow, flow control mechanisms may be utilized by the ISD/IRG and/or FMP/C-FMP. Voice data is accessed first using an appropriate queuing scheme such as priority fair weighted queuing or another suitable scheme. In addition to queuing, bandwidth may be varied so that more DSL frames are assigned to voice and/or video than data. Further, asymmetric DSL protocols may be dynamically implemented such that more bandwidth may be allocated;to one direction or the other as necessary. Where one ISD/IRG 22 is serving as the node for, for example, a seven way conference call, the outgoing bandwidth for the node may need to be increased relative to the incoming bandwidth. However, where a PPV movie and/or Internet file is being downloaded, the bandwidth may be reversed such that more bandwidth is available from the network to the CPE equipment. Thus, asymmetric high speed transport of data to the home with the asymmetric character of the link and apportionment of that bandwidth variable depending on the amount of traffic results in a substantially more flexible platform to implement advanced services to the user. Multiple modem protocols may be downloaded into the DSL modem dynamically to chose the best protocol for a particular dynamic bandwidth allocation to maximize the amount of through put.

Detailed Description Text (50):
For example, with reference to FIGS. 6A and 6B, information may be multiplexed into one or more DSL frames in order to dynamically allocate bandwidth. In one exemplary embodiment, where data is being input to one of the connected data devices (e.g., a PC), and a voice call comes in, a dynamic allocation of bandwidth may occur. Assume that 1 Mbps is available for information transfer. Prior to the incoming call, all 1 Mbps may be completely used for the data transmission. However, as soon as a voice call comes in, since voice has a higher priority than data, a 64 Kbps channel is deallocated from data usage and is allocated for voice. If a second voice call comes in, then another data channel will be deallocated from data usage and allocated for voice. As a voice call gets terminated, then the allocated voice slots will be reallocated to use by data and/or another voice channel. For example, as shown in FIG. 6B, voice call 4 V4 is terminated and the bandwidth is reallocated to D3.

Detailed Description Text (51):
Accordingly, as the bandwidth is reallocated, the header may be updated to reflect the new bandwidth allocation. This allocation may occur in both the CPE to network traffic and network to CPE traffic. Additionally, as slots are added to CPE to network traffic, slots may be deallocated to network to CPE traffic implementing a dynamic asymmetric bandwidth allocation. Hence, the system dynamically allocates bandwidth in real time to maximize information transfer. Where individual packets are used to transport voice and data between the ISD/IRG 22 and the FMP/C-FMP 32, an individual channel does not need to be allocated. Voice packets are simply given priority over data packets in the transfer. Therefore, silence periods may be used to the advantage and a higher overall bandwidth occurs. Data is simply stored in the buffer and/or slowed in its transfer using standard flow control where voice has

priority. In the current system, bandwidth may be. allocated on a per-frame basis. By contrast, conventional systems only allocated bandwidth at the time a secession is initiated--and once initiation has been completed, bandwidth allocation cannot be changed without tearing down the call. However, in aspects of the present invention, bursty data may be accommodated more efficiently since the burst data rate may be accommodated via dynamic bandwidth allocation.

Detailed Description Text (52):
The DSL/cable modem 114 may be variously configured to supporting transport over 18000 foot loops at following rates exceeding 1 Mbits/second, or coaxial cable or hybrid facilities of any length and may include adapting duplex and downstream bit-rates to the needs of the current traffic such that more bandwidth is provided to the upstream and/or downstream and/or between various devices based on an intelligent bandwidth allocation algorithm. The DSL/cable modem may provide a single-tone DMT mode for low power operation during idle periods to avoid re-synchronization at next service request and enable "always on" functionality. The always on and/or virtually always on functionality allows voice/data calls to be established virtually instantaneously without long delays. The virtually always on functionality allows the channel bandwidth to adapt to the current needs of the system to minimize power consumption, reduce thermal dissipation, and generate less interference. For example, if no device is currently being utilized, only a very low bandwidth channel is required. Accordingly, by reducing the bandwidth available across the loop, it is possible to improve overall performance for other lines.

Detailed Description Text (53):
The DSL/cable modem must share upstream and downstream bandwidth over coaxial or hybrid fiber/coaxial facilities but has the advantage of being able to allocate upstream and downstream demand for services in priority with other coaxial cable subscribers or, if both twisted pair and coaxial facilities are provided, to allocate to one or the other depending on priority.

Detailed Description Text (54):
The present system discloses a local loop architecture that can overcome many of the problems associated with either a twisted pair or coaxial cable architecture alone. Amongst the claimed advantages is the ability to have multiple appearances of a call on a single twisted pair or coaxial cable channel. The architecture also allows data and voice to be mixed and bandwidth can be dynamically allocated in real time.

Detailed Description Text (68):
Further, because the ISD/IRG has high bandwidth access to external networks, the ISD/IRG may serve as an Internet gateway. For example, by configuring the ISD/IRG as an Internet gateway server, the ISD/IRG allows every computer in the home high-speed access and E-mail capabilities with the Internet. The LAN may also include inexpensive network computers without expensive disk drives and peripherals allowing the average home owner to purchase many inexpensive network computers, e.g, one for each member of the family. Similarly, WEB TV boxes could use the same LAN network LAN A to obtain high speed access to the Internet. The ISD/IRG may be variously configured as a proxy server, such that each of the devices connected to the UP proxy server may utilize TCP/IP protocol and hence access a single IP connection from the IP server located in the ISD/IRG across the connection to the central office. Where the ISD/IRG is configured as an IP proxy server, the ISD may accommodate any number of additional devices that are not TCP/IP devices or Internet literate. In this manner, the ISD/IRG may have a proprietary interface out to the device, such as the set top box, the personal computer, the digital telephones, the VisionPhone, or other end user devices and yet access the power of the Internet through the ISD/IRG services. So the protocol between the ISD/IRG and the end user devices may be conventional protocols, such as CEBus for meter reading, ISDN for digital telephones and VisionPhones, fire wire, IEEE 1394 for consumer electronic devices such as video DVD players and/or other similar devices.

Detailed Description Text (70):
FIGS. 16-20 depict an integrated remote control and phone according to an embodiment of the present invention. Referring to FIG. 16, the ISD/IRG 22 interfaces with a set-top device 131, which typically is a controller for a television set 360 on which it sits. The ISD/IRG 22 may be powered at 90 V AC fed via the coaxial cable

television drop or via 48 V DC power from the twisted pair. The coaxial cable drop and/twisted pairs are shown entering ISD/IRG 22 at the left. The ISD/IRG 22 may be coupled to the set top devices 131 using any suitable interface such as Ethernet interface 119 (FIG. 2), IEEE 1394 interface 112, ISDN interface 113, Business Interface 116, and/or RF audio/video coaxial Interface 120. The ISD/IRG 22 may or may not include an MPEG decoder. In exemplary embodiments, the MPEG decoder may be disposed in set-top 131 to minimize the bandwidth of the ISD/IRG interfaces. Where the MPEG decoder is disposed in the set-top device 131, MPEG packets may be downloaded from the NSP 36, via the network 42, through the FMP/C-FMP 32, through the ISD/IRG 22 and into the settop 131. In exemplary embodiments, video programming is being continuously multicast across network 42 and selectively directed to one or more ISD/IRG devices 22 responsive to a profile input by a viewer and/or responsive to commands by a viewer.

Detailed Description Text (101):
One of the major problems currently with the return path is that the signal from each of the homes is at vastly different levels. The different levels on the return path signal is due to a number of factors such as differences in the in-home wiring schemes between each of the individual houses, differences in the distance from the tap to the house and differences in the distance from the particular tap the house is connected to the node. Normally, the return path is consolidated at the node and not at each of the individual tap locations. Additionally, where the return path for each of the individual homes is returned at a different frequency, the different frequencies will also have different delays. One manner of alleviating many of these problems is to place the ISD/IRG within the tap. In this manner, when return path signals are sent back to the ISD/IRG, the ISD/IRG has an opportunity to adjust the signal strength and frequency of the return signal such that when the signals arrives at the node they are all approximately the same level and therefore can be multiplexed and returned to the head end in a more efficient manner. The invention also has the advantage in that no; power is required to be supplied to each of the individual houses to power the ISD/IRGs. In this configuration, the power is provided only to the tap and downstream of the taps to the houses is provided simply lifeline support on a twisted pair and the cable is not powered. Thus, there is no need to provide 90 volts or step down 90 volts downstream to the house, thus safety is increased as well as the overall efficiency of the system. Additionally, by having an active tap device, it is possible to packetize all telephone traffic at that point and thus the additional amount of bandwidth is substantially conserved since the IP packets and the voice can be compressed and simply put on the return path with all of the other IP packets from any other house utilizing the return path as well as data. The voice could be packetized in IP packets just like data and the return path could be indistinguishable between voice and data. Placing the ISD/IRG in the tap also may provide additional efficiency in that the downstream data may be packaged for a single tap location and have the tap thereafter make the distribution between each of the individual houses associated with the tap. In this manner, a greater level of efficiency can be provided over the overall cable network in both the upstream and downstream transmission directions. Another option is to include with the; ISD/IRG and/or individually a separate amplifier in each tap so that the signal is amplified and filtered at each tap on the high frequency cable system. In this way, it is possible to avoid a lot of amplifiers distributed throughout the system.

Detailed Description Text (104):
Currently, a cable modem requires approximately 10 watts of power consumption. This power consumption is extremely high for lifeline support and does not include the additional power consumption required by a IP telephony. Thus, it seems that lifeline support may require bypassing of the cable modem. In this manner, a new solution is required such as allocating the lowest 4 megahertz of the bandwidth from the tap to the home for lifeline support for the telephone. If the lowest 4 megahertz is allocated to lifeline support for the telephone with an associated voltage implied on this cable, it may be possible not to power the cable modem or to power only the portion of the cable modem such as the QAM modulator A to D converter down converter and television tuner necessary to modulate the 4 kilohertz bandwidth onto the upstream cable transmission path. One issue is that the splitters in the home or located proximate to the home need to be configured to pass the lower 4 kilohertz for lifeline telephony. If the splitters are not configured, they need to

be redesigned and implemented with wide bandwidth splitters to include the lower 4 kilohertz for lifeline support. If we are running a lifeline POTS line in the lower 4 kilohertz, the tap may also be required to include a voltage converter to have 48 volt power to the coax cable connection to the home. Essentially one concept is to have all the NIU's go into a sleep cycle 50% of the time and only look for ringing or data on a periodic basis and, Thereby all of the power requirements on the entire system are substantially reduced in that the NIU is only wakened up when it is addressed. So it can be statistically managed such that if a highly unusual number of people on a particular node try and pick up the phone, the system can provide a warning message that the system is currently:overloaded and all the circuits are busy and please try back later. The same thing could be utilized for bandwidth limitations whereby for IP telephony could handled on a statistical method and if the bandwidth is exceeded, it could ask the user to try back later.

Detailed Description Text (105):
For lifeline support an alternative embodiment is to power a low bandwidth amplifier and provide a reduced operational mode whereby lifeline support is sent back at a low bandwidth 4 kilohertz provided over a cable system. One way for implementing this is for the nodes and/or the hub to detect when power has failed on a particular drop line and to implement a lifeline capability for that drop line whereby each telephone will be allocated a 4 kilohertz segment until power on that drop line came back online. In this manner, lifeline could be supported with minimal voltage provided to each of the telephones and power consumption. The power supply at the node, hub and/or network interface unit may detect when power is eliminated or goes down and put itself into a power-down mode with reduced capabilities. The point is that you cannot have the system such that when it comes back up powered that you drop the telephone call, so the requirement is to maintain the telephone call either in the down mode or the if the power returns. So it may be required to use just a single amplifier and/or a single circuitry for handling those services. The safety issue is currently solved by limiting the 90 volts to 20 milliamps downstream to the house.

Detailed Description Text (110):
The following applications are hereby incorporated by reference as to their entire contents: 1. A Hybrid Fiber Twisted-pair Local Loop Network Service Architecture, U.S. application Ser. No. 09/001,360, filed Dec. 31, 1997; 2. Dynamic Bandwidth Allocation for use in the Hybrid Fiber Twisted-pair Local Loop Network Service Architecture, U.S. application Ser. No. 09/001,425, filed Dec. 31, 1997; now U.S. Pat. No. 6,307,839 4. VisionPhone Privacy Activator, U.S. application Ser. No. 09/001,909, filed Dec. 31, 1997; 5. VisionPhone Form Factor, U.S. application Ser. No. 09/001,583 filed Dec. 31, 1997; 6. VisionPhone Centrally Controlled User Interface With User Selectable Options, U.S. application Ser. No. 09/001,576, filed Dec. 31, 1997; 7. VisionPhone User Interface Having Multiple Menu Hierarchies, U.S. application Ser. No. 09/001,908, now abandoned, filed Dec. 31, 1997; 8. VisionPhone Blocker, U.S. application Ser. No. 09/001,353, now U.S. Pat. No. 5,949,474, filed Dec. 31, 1997; 9. VisionPhone Inter-com For Extension Phones, U.S. application Ser. No. 09/001,358, filed Dec. 31, 1997; 10. Advertising Screen Saver, U.S. application Ser. No. 09/001,574, now abandoned, filed Dec. 31, 1997; 11. Information Display for Visual Communication Device, U.S. application Ser. No. 09/001,906, now U.S. Pat. No. 6,222,520, filed December 31, 1997; 12. VisionPhone Multimedia Announcement Answering Machine, U.S. application Ser. No. 09/001,911, filed Dec. 31, 1997; 13. VisionPhone Multimedia Announcement Message Toolkit, U.S. application Ser. No. 09/001,345, filed Dec. 31, 1997; 14. VisionPhone Multimedia Video Message Reception, U.S. application Ser. No. 09/001,362, now abandoned, filed Dec. 31, 1997; 15. VisionPhone Multimedia Interactive Corporate Menu Answering Machine U.S. application Ser. No. 09/001,575, now U.S. Pat. No. 6,226,362, filed Dec. 31, 1997; Announcement, 16. VisionPhone Multimedia Interactive On-Hold Information Menus, U.S. application Ser. No. 09/001,356, now U.S. Pat. No. 6,020,916, filed Dec. 31, 1997; 17. VisionPhone Advertisement When Calling Video Non-enabled VisionPhone Users, U.S. application Ser. No. 09/001,361, filed Dec. 31, 1997; 18. Motion Detection Advertising, U.S. application Ser. No. 09/001,355, now abandoned, filed Dec. 31, 1997; 19. Interactive Commercials, U.S. application Ser. No. 09/001,578, now U.S. Pat. No. 6,178,446, filed Dec. 31, 1997; 20. VisionPhone Electronic Catalogue Service, U.S. application Ser. No. 09/001,421, now U.S. Pat. No. 5,970,473, filed Dec. 31, 1997; 21. A Multifunction Interface Facility Connecting Wideband Multiple

Access Subscriber Loops with Various Networks, U.S. application Ser. No. 09/001,422, filed Dec. 31, 1997; 22. Life Line Support for Multiple Service Access on Single Twisted-pair, U.S. application Ser. No. 09/001,343, filed Dec. 31, 1997; 23. A Network Server Platform (NSP) For a Hybrid Fiber Twisted-pair (HFTP) Local Loop Network Service Architecture, U.S. application Ser. No. 09/001,582, now U.S. Pat. No. 6,229,810, filed Dec. 31, 1997; 24. A Communication Server Apparatus For Interactive Commercial Service, U.S. Application Ser. No. 09/001,344, filed Dec. 31, 1997; 25. NSP Based Multicast Digital Program Delivery Services, U.S. application Ser. No. 09/001,580, filed Dec. 31, 1997; 26. NSP Internet, JAVA. Server and VisionPhone Application Server, U.S. application Ser. No. 09/001,354, now U.S. Pat. No. 6,044,403, filed Dec. 31, 1997; 27. Telecommuting, U.S. application Ser. No. 09/001,540, filed Dec. 31, 1997; 28. NSP Telephone Directory White-Yellow Page Services, U.S. application Ser. No. 09/001,426, now U.S. Pat. No. 6,052,439, filed Dec. 31 1997; 29. NSP Integrated Billing System For NSP services and Telephone services, U.S. application Ser. No. 09/001,359, filed Dec. 31, 1997; 30. ISD and NSP Caching Server, U.S. application Ser. No. 09/001,419, filed Dec. 31, 1997; 31. An Integrated Services Director (ISD) For HFTP Local Loop Network Service Architecture, U.S. application Ser. No. 09/001,417, filed Dec. 31, 1997; 32. ISD and VideoPhone (Customer Premises) Local House Network, U.S. application Ser. No. 09/001,418, filed Dec. 31, 1997; 33. ISD Wireless Network, U.S. application Ser. No. 09/001,363, filed Dec. 31, 1997; 34. ISD Controlled Set-Top Box, U.S. application Ser. No. 09/001,424, filed Dec. 31, 1997; 35. Integrated Remote Control and Phone, U.S. application Ser. No. 09/001,423, filed Dec. 31, 1997; 36. Integrated Remote, Control and Phone User Interface, U.S. application Ser. No. 09/001,420, now U.S. Pat. No. 6,92,210, filed Dec. 31, 1997; 37. Integrated Remote Control and Phone Form Factor, U.S. application Ser. No. 09/001,910, filed Dec. 31, 1997; 38. VisionPhone Mail Machine, (Attorney Docket No. 3493.73170) U.S. Provisional Application Ser. No. 60/070,104, filed Dec. 31, 1997; 39. Restaurant Ordering Via VisionPhone, (Attorney Docket No. 3493.73171) U.S. Provisional Application Ser. No. 60/070,121, filed Dec. 31, 1997; 40. Ticket Ordering Via VisionPhone, (Attorney Docket No. 3493.73172) U.S. Provisional Application Ser. No. 60/070103, filed Dec. 31, 1997; 41. Multi-Channel Parallel/Serial Concatenated Convolutional Codes And Trellis Coded Modulation Encode/Decoder, U.S. application Ser. No. 09/001,342, now U.S. Pat. No. 6,088,387, filed Dec. 31, 1997; 42. Spread Spectrum Bit Allocation Algorithm, U.S. application Ser. No. 09/001,842, now U.S. Pat. No. 6,008,817, filed Dec. 31, 1997; 43. Digital Channelizer With Arbitrary Output Frequency, U.S. application Ser. No. 09/001,581, filed Dec. 31, 1997; 44. Method And Apparatus For Allocating Data Via Discrete Multiple Tones, U.S. patent application Ser. No. 08/997,167 now U.S. Pat. No. 6,134,274, filed Dec. 22, 1997; 45. Method And Apparatus For Reducing Near-End Cross Talk In Discrete Multi-Tone Modulators/Demodulators, U.S. application Ser. No. 08/997,176, now U.S. Pat. No. 6,144,695, filed Dec. 23, 1997; 46. U.S. patent application 08/943,312 now U.S. Pat. No. 6,061,326, filed Oct. 14, 1997 entitled Wideband Communication System for the Home, to Robert R. Miller, II and Jesse E. Russell; and 47. U.S. patent application No. 08/858,170, now U.S. Pat. No. 6,111,895, filed May 14, 1997, entitled Wide Band Transmission Through Wire, to Robert R. Miller, II, Jesse E. Russell and Richard R. Shively.

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